Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV(New) EXAMINATION – SUMMER 2016

Subject Code:2142601 **Date:03/06/2016**

Subject Name:Rubber Compounding Materials

Time:10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1		Answer the following.	14
	1	Define the term "Filler".	
	2	Name the peptiser used for sulfur modified Chloroprene Rubber.	
	3	Write the particle size of Channel Carbon Black.	
	4	Define the term " Titanium White."	
	5	Which type of Sponge rubber produced by using Benzene Sulphonyl Hydrazide type Blowing Agent.	
	6	List the name of Abrasive materials.	
	7	In which rubber compound Mgo is used as a curing agent along with Zno?	
	8	Name the vegetable oils used as Softeners in Rubber Goods.	
	9	Write the chemical name of Renacit IV.	
	10	What do you mean by Art of Compounding?	
	11	Write the function of Accelerators.	
	12	List the name of Flame Retardants materials.	
	13	Write the function of Extender.	
	14	Define the term " Blowing Agents."	
Q.2	(a)	Write about Phenolic Resins	03
	(b)	Short Note on " Silicas".	04
	(c)	You are asked to manufacture seven (7) laces pieces of Rubber Suspension Bush to be supplied annually to a Car manufacturing company. The weight of Bush is 70 gram. Calculate the cost of One bush and record type of Press and its steam requirement.	07
		OR	
	(c)	Your company has to make a microcellular sheet of size 30"X30"X10mm.Find the manufacturing cost considering 25% expansion in mould release.	07
Q.3	(a)	Discuss in detail about Process Oil.	03
	(b)	Write about the Petroleum Asphalt.	04
	(c)	Short Note on "Organic Pigments".	07
		OR	
Q.3	(a)	Write about the Fatty acids & their derivatives.	03
	(b)	Short Note on "Red Pigments".	04
	(c)	Discuss in detail about Factice.	07

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Q.4	(a)	List the desirable properties of Antioxidants.	03
	(b)	Explain in detail about Mechanism of Oxidation.	04
	(c)	Describe about “Delayed Action Accelerators”.	07
		OR	
Q.4	(a)	Short note on “ Phthalic Anhydride”	03
	(b)	Discuss about the properties of Accelerators.	04
	(c)	Define the term “Ageing”. Explain in detail about the factors affecting Ageing.	07
Q.5	(a)	Difference between Organic & Inorganic Blowing Agent.	03
	(b)	Write about “Steel & Glass Fibre” used as a Special Purpose Additives.	04
	(c)	List the different grades of Carbon Black. Write the properties & applications of any three grade.	07
		OR	
Q.5	(a)	“ Particle size is a important property of Carbon Black”. Justify the statement.	03
	(b)	Write about the “ Dinitroso Pentamethylene Tetramine.”	04
	(c)	“ Textiles are used as Reinforcing Agents.” Justify the statement.	07

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